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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,223	10/09/2003	Mark A. Schubert	SP-1665.1 US	8111

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EXAMINER	
CHU, HELEN OK	

ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/682,223	SCHUBERT ET AL.	
	Examiner	Art Unit	
	Helen O. Chu	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' Appeal Brief was received on January 22, 2008.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.

Appeal Decision

3. In view of the Appeal Brief filed on January 22, 2008, PROSECUTION IS HEREBY REOPENED. New Grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Response to Amendment

4. The affadavit filed on March 12, 2007 under 37 CFR 1.131 is sufficient to overcome the rejection made under 35.U.S.C 103(a) as unpatentable under Shubert et al. (US Publication 2003/0118902) in view of Chen et al. reference (US Patent 6,236,205.

5. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

6. Claims 1, 2, 6-9, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Shubert et al. (US Publication 2003/0118902 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 2 and 6, the Shubert et al reference discloses an electrochemical cell comprising a metal container (P 1) with an opening and a metal cover (P 37). The electrochemical cell contains a positive electrode, a negative electrode a separator disposed between the positive and negative electrode, an electrolyte (P 37). The Shubert et al. reference also discloses a seal member that may seal the opening between the container and the metal cover as illustrated in Figure 1

(Applicants second seal member) and may also be one that includes a pressure relief mechanism (P 44) . The thermoplastic seal member made of more than 30 percent of polyolefin (Applicants thermal-stabilizing filler) balanced aromatic polymer (Applicants thermoplastic resin) such as polyphenylene sulfides.

Regarding claims 7-9, the Shubert et al. reference disclose that the pressure relief mechanism includes vent ball (Applicant's plug) and a vent bushing which can be a seal member according to the present invention of seal member (P 43, component 48) which takes a form of hollow cylindrical shape as illustrated by Fig. 5

Regarding claim 11, the Shubert et al. reference illustrates the vent ball is within the aperture in the first metal cover.

Regarding claim 12, the Shubert et al. reference discloses a nonaqueous electrolyte (P 42).

Claim Rejections - 35 USC § 103

7. The rejections under 35 U.S.C 103 (a), on claims 1-12 and 18-21, Schubert et al. in view of Chen et al., as applied to claim 12, are withdrawn

8. The rejections under 35 U.S.C 103 (a), on claims 13-17 and 23, Schubert et al. in view of Chen et al. and further in view of Bakos et al. are withdrawn.

9. The rejections under 35 U.S.C 103 (a), on claims 24 and 25, Schubert et al. in view of Chen et al. and further in view of Yasuda et al. are withdrawn.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1-15, 18, 20-22 are rejected under 35 U.S.C. 103(a) as unpatentable over Zupancic (US Patent 4,592, 970) in view of Malay et al. (US Patent 6,468,691) in further view of Doose (U.S. Patent 4,580,790).

Regarding claims 1-5 and 18, 20, 21, the Zupancic reference discloses an electrochemical cell with a metal container which includes a lid can be stainless steel (Col. 7, Li 35-40). The electrochemical cell have a positive electrode, negative electrode, a separator dispose in between and electrolyte (Col. 8, Li 15-67). The Zupancic reference further discloses a pressure relief vent member with orifice, a corrosion-resistant polytetrafluoroethylene liner in which a ball (Applicant's plug) is placed and sealant in between the liner and orifice (Abstract, Applicants first thermoplastic seal member) which seals an aperture within the container and the cover (Fig. 1). The Zupancic reference discloses that the sealant is made of a chlorotrifluoroethylene resin (Col. 4, li 1-5). The sealant is disposed between the walls of the orifice and liner to prevent leakage of the electrolyte at the interface (Col. 3, li 60-68). Many electrolyte have a prosperity for creepage along component parts of cells and eventually finds a path outside of the cell (Col. 3, lines 60-68).The Malay et al. reference discloses a problem arises with electrochemical cells where electrolyte have a high affinity for wetting metal surfaces and are known to creep through the sealed surfaces of an electrochemical cell (Col. 1, lines 20-30) Leakage in this manner can also cause a corrosive deposit on the surface of the cell. To obviate this problem an improved

compressible sealing gasket is provided (Col. 10-20). The gasket as disclosed by the Malay reference comprises a polymeric material such polytetrafluoroethylene, fluorinated-ethylene polypropylene, chlorotrifllluoroethylene, polyvinyls and can also include a filler made of glass (Applicant's thermal-stabilizing filler) to modify the sealing properties of the gasket (Col. 7, lines 25-40) such capabilities of withstanding pressure forces of 2000 -3000 psi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a sealing gasket with improved compressibility as disclosed by the Malay reference into the vent member as disclosed by the Zupancic reference in order to prevent electrolyte and corrosion improving the overall marketability and effectiveness of the electrochemical cell. Additionally, the substitution of known equivalent structures such as polytetrafluoroethylenes and chlorotrifluoroethylene involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); In re Ruff 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR v. Teleflex.** The Zupancic and the Malay reference does not disclose a thermal-stabilizing filler material of more than 10 weight percent. However, the Doose reference discloses seals comprising polytetrafluoroethylene and15% to 25% E-glass filler are capable of withstanding pressure forces of 2800 psi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate 15% to 25% of E-glass

as disclosed by the Doose reference into sealing gasket comprising polytetrafluoroethylene or chlorotrifluoroethylene as the glass filler material in order to have a sealing gasket with sufficient pressure strengths as disclosed by the Malay reference to withstand electrolyte creepage and reducing corrosion of the electrochemical cell as disclosed by the Zupacic reference.

Regarding claim 6, the Zupancic reference discloses a second sealant material made of chlorotrifluoroethylene disposed within the tubular member over the force-fitted member and the area of the housing defining the vent orifice surrounded by the tubular member.

Regarding claims 7-9, 11, the Zupancic reference discloses a pressure relief vent member with orifice, a corrosion-resistant polytetrafluoroethylene liner in which a ball (Applicant's plug) is placed and sealant in between the liner and orifice (Abstract, Applicants first thermoplastic seal member) which seals an aperture within the container and the cover comprises a hollow cylindrical shape.

Regarding claim 10, the Zupancic reference discloses the ball of the pressure relief vent is made of glass (Col. 5, lines 15-20)

Regarding claims 12 and 13, the Zupancic reference discloses a nonaqueous electrolytic solute in the electrochemical cell which is organic (Col. 6, Lines 50-60).

Regarding claims 14 and 15, the Zupancic reference discloses the preferred anode material is lithium (Col. 6, Lines 5-15) and MnO_2 or iron disulfide cells (Col. 7, 50-60).

Regarding claim 22, the Zupancic reference discloses the liner of the vent member is compressed from 20-40 percent (Col. 5 lines10-20). The reference further discloses the thickness of the liner to be 0.023 inches thick which is not between 0.006 and 0.015 thick as recited in the claimed recitation, however, it would have been obvious matter of design choice to change (some kind of size), since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art *(MPEP 2144.04 (IV))*.

It is noted that claims 22 are product-by-process claims. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since product is similar to that of the Applicant's, Applicant's process is not given patentable weight in this claim.

12. Claims 16, 17 and 23 are rejected under 35 U.S.C. 103(a) as unpatentable over Zupancic (US Patent 4,592, 970) in view of Malay et al. (US Patent 6,468,691) in further view of Doose (U.S. Patent 4,580,790) in further view of Turchan et al. (U.S. Patent 4,482,613.

The Zupancic in view of Malay et al. in further view of Doose discloses the claimed invention above and further discloses herein. However, the Zupancic in view of

Malay et al. in further view of Doose does not disclose an organic solvent comprises at least 80 volume percent of one or more ethers having a boiling point not greater than 90 degrees Celsius. However, the Turchan et al. reference discloses a Li/MnO2 cell, having a safety pressure vent and an organic electrolyte solvent is enhanced by, in conjunction with said vent, providing said organic electrolyte solvent with at least 80% by volume of a volatile component, such as dimethoxyethane is preferably below 90 .degree. C. (Col. 1, lines 45-55) Upon cell venting, under abuse conditions, the cell is thereby rapidly evacuated and safely rendered inoperable under further abuse conditions. Therefore, it would been obvious to incorporate an organic electrolyte solvent of 80% or more with a boiling point of below 90 degrees Celsius as disclosed by Turchan et al. reference in the Li/MnO_2 electrochemical cell with a pressure safety vent as disclosed by Zupancic in view of Malay et al. in further view of Doose inorder to prevent any conditions which would attributed to the fact that upon cell venting at an elevated temperature and pressure the volatile electrolyte solvent is sufficiently vaporized to be rapidly evacuated from the cell during venting in order to cause cell operation is therefore safely substantially shut down within a short period of time after venting.

13. Claims 19, 24 and 25, are rejected under 35 U.S.C. 103(a) as unpatentable over Zupancic (US Patent 4,592, 970) in view of Malay et al. (US Patent 6,468,691) in further view of Doose (U.S. Patent 4,580,790) in further view of Yoshinaka et al. (US Patent 5,183,594)

The Zupancic in view of Malay et al. in further view of Doose discloses the claimed invention above and further discloses herein but does not specifically state an ethylene-polytetrafluoroethylene, however, the Yoshinaka et al. reference discloses thermoplastic resins includes compounds such ethylene/tetrafluoroethylene and TEFLON (polytetrafluoroethylene. The substitution of known equivalent structures such as polytetrafluoroethylenes and chlorotrifluoroethylene involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); In re Ruff 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. **KSR v. Teleflex**

Response to Arguments

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOC

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795